



# **KAUAI COVID-19 CASPER**

---

**PRELIMINARY  
REPORT**

**APRIL 2020**

**HAWAII STATE DEPARTMENT OF HEALTH  
KAUAI DISTRICT HEALTH OFFICE**





# **ASSESSING THE IMPACT OF COVID-19 ON KAUAI HOUSEHOLDS**

To assess the impact of the coronavirus pandemic on Kauai households, a community assessment for public health emergency response (CASPER) was conducted on Kauai in April 2020 by the Hawaii State Department of Health's (HDOH) Kauai District Health Office. CASPER is a validated two-stage cluster sampling methodology developed by the Centers for Disease Control and Prevention (CDC) to rapidly obtain information about the health and resource needs of a community. Information obtained is generalizable to the entire sampling frame, providing population-based estimates.

The Kauai District Health Office (KDHO) conducted CASPERs annually from 2017-2019 to monitor trends in the emergency preparedness of island residents. Through these efforts, over 60 HDOH staff and volunteers were trained. This resource was tapped during the coronavirus disease 2019 (COVID-19) response effort on Kauai in order to determine the impacts of the pandemic on our community. The survey protocol was adapted to ensure the safety of surveyors and participants as well as compliance with physical distancing requirements. The objectives of Kauai's CASPER included assessing knowledge, attitudes, and practices about (COVID-19), as well as the financial and mental health impacts on households.

# METHODS



CASPER is a two-stage cluster sampling methodology. The first stage, cluster selection, begins with the determination of a sampling frame, or the area from which the sample is selected and to which the data is generalized. Once the sampling frame is determined, thirty census blocks (termed “clusters”), are randomly selected. The probability of a census block being selected is proportional to the number of housing units located within it.

The second stage of sampling, household selection, involves systematic selection of seven households per cluster. Homes are selected by dividing the total number of housing units in the cluster by seven (the target number of surveys per cluster) to determine each cluster’s sequence number (“n”). Survey teams then attempt to interview every “nth” house, with an ultimate target of 210 surveys (30 clusters x 7 surveys/cluster).

For this assessment, the sampling frame was occupied households on the island of Kauai. 2010 census block data were used to select 30 clusters via random number generation. Kauai island has a total of 2,949 census blocks, 29,758

housing units, 23,213 occupied housing units, and a population of approximately 72,000. As a major tourist destination, many housing units are not occupied by residents and are classified as “vacant” in census data. To capture data representative of Kauai residents, cluster selection used occupied housing unit data to reduce the likelihood of selecting clusters with primarily short-term vacation rentals.

Survey planners utilized satellite imagery and Kauai County Real Property tax map data to pre-select households. Within QGIS, random starting points were generated within each cluster. Researchers used these points, along with Kauai County tax parcel shapefiles, to enumerate and select housing units using each cluster's assigned sequence number. Researchers continued in a serpentine manner until seven primary households and five replacement households were selected in each cluster. Survey teams were supplied with a detailed map of their cluster and their selected household addresses upon deployment. This methodology saved significant time in the field.

The 2020 Kauai CASPER questionnaire was developed by the unified command and operations staff of the county's COVID-19 incident management team (IMT). The survey included questions that addressed basic household information, prevalence of households with members at high risk of severe disease, financial impacts, mental health/stress impacts, and COVID-19 communication sources.

Numerous methods were utilized to notify the public of the COVID-19 CASPER, including an HDOH press release, radio advertisements, and County of Kauai social media posts. HDOH addressed concerns voiced by the community regarding the safety of conducting door-to-door surveys during mandatory stay-at-home orders by emphasizing how the survey protocol followed social distancing requirements and the ability for selected households to participate via phone.

From April 22-23, eighteen survey teams conducted door-to-door surveys in the thirty randomly selected clusters. Survey teams were comprised of HDOH staff with support from volunteers of the Kauai Medical Reserve Corps and the American Red Cross. Survey teams wearing cloth face masks knocked on doors, backed up six feet, and obtained verbal consent from the household.

Once consent was obtained, selected households were offered

the opportunity to participate in a socially distanced outdoor interview or a phone interview. Each survey team was assigned a burner phone so they could complete surveys from the car and leave letters instructing households who weren't home upon the initial visit to call them back to complete the survey or decline to participate.

Survey teams reported most households were willing to participate and grateful that HDOH was checking in to see how they were doing. The surveying process was much faster during COVID-19 than during prior Kauai CASPERs. Teams were able to complete the surveys within the first two days; No teams were deployed on the final day.

Participating households were provided drawstring backpacks, cloth face masks, waterproof bags for storage of important documents and educational materials on COVID-19 and available social service resources.

## RESULTS

---

Survey data were collected electronically via tablets using the EpiCollect 5 application. Entries were uploaded upon return to the operations center. Once synced, data was analyzed using Epi Info 7 software. Survey teams attempted to contact 271 households, spoke



with a resident at 212 households, and completed 189 interviews, producing the following rates:

**Completion rate: 90.0%**

(completed interviews/ 210)

**Contact rate: 69.74%**

(completed interviews/ attempted households)

**Cooperation rate: 89.15%**

(completed interviews/ contacted households)

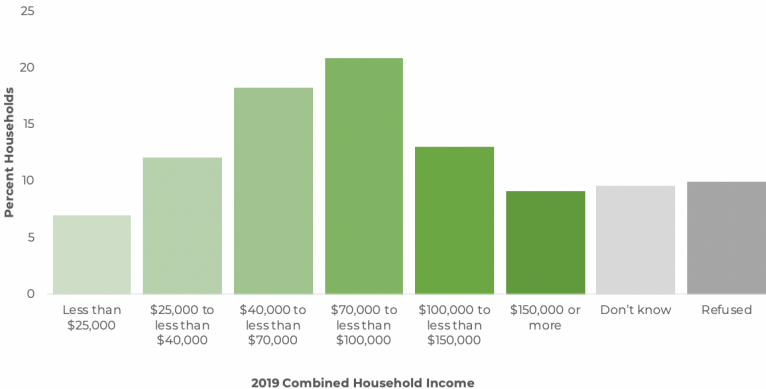
During analysis, each survey was assigned a weight to account for the likelihood of that household being selected for participation.

Data points discussed throughout this report refer to weighted estimates to ensure representativeness of the sampling frame (Kauai island occupied housing units). Survey results are grouped by subject matter and are summarized on the following pages.

### Basic Household Information

The average household size was **3 persons** per household.

**7.1%** of households reported at least one child **under 2** and **41.5%** of households reported at least one adult **over 65** years old at their residence. **1.4%** of households have a member who is currently **pregnant**.



**19.6%** of households indicated they made **less than \$40,000** in 2019.

Question	Own (%)	Rent (%)	Other (%)	Don't know (%)
Does your household own or rent this residence?	69.0	29.6	1.4	0.5

	Yes (%)	No (%)	Don't know (%)	Refused (%)
Is anyone in your household pregnant?	1.4	98.1	-	0.5
Is there an adult in your household that does not speak English?	2.1	97.9	-	-
Languages other than English included Ilocano, Tagalog, Tongan, and Marshallese.				

In the past 5 years, has anyone in your household taken training in first aid, CPR, or community emergency response team (CERT)?	42.8	51.9	4.3	0.4
--	------	------	-----	-----

	Landline phone (%)	Cellular phone (%)	Internet access (%)	None of the above (%)
Does your household have the following?	36.2	98.1	88.8	-

## Knowledge, Attitudes, and Practices Regarding COVID-19

Question	Yes (%)	No (%)	Don't know (%)	Refused (%)
Has anyone in your household been tested for COVID-19?	5.0	94.3	0.7	-
If yes, did anyone test positive? (n=9)	-	100	-	-
If no, has anyone been sick and thought they had COVID-19 but didn't get tested?	4.2	94.9	1.0	-
Have you or anyone in your household experienced emotional distress related to the coronavirus pandemic?	31.8	66.7	1.6	-
If yes, do you know where to seek help if you want it? (n=61)	77.9	20.6	1.5	-
Is your household familiar with the Kauai Emergency Management Agency's COVID-19 website, where you can access information and materials specific to Kauai?	80.1	19.9	-	-
Do you have cloth masks for all household members to wear when out of the house?	97.9	1.0	1.1	-
	<b>Always (%)</b>	<b>Usually (%)</b>	<b>Sometimes (%)</b>	<b>Rarely (%)</b>
If yes, do household members wear cloth masks when they go out? (n=185)	82.1	12.5	2.9	0.5
	<b>Very (%)</b>	<b>Somewhat (%)</b>	<b>Not (%)</b>	<b>Don't know (%)</b>
How concerned are you about your household members getting sick with COVID-19?	37.4	32.7	27.3	2.7
	<b>High (%)</b>	<b>Medium (%)</b>	<b>Low (%)</b>	<b>Don't know (%)</b>
How would you describe the current level of stress in your household?	5.3	33.6	60.5	0.5

Chronic Health Conditions	Percent Households (%)	Additional COVID-19 Information	Percent Households (%)	Information Sources	Percent Households (%)
Some individuals are at higher risk for severe disease from COVID-19. Do any of your household members have the following conditions?		What additional information would your household like to know about COVID-19?		Where does your household go for information related to the COVID-19 pandemic?	
Moderate to severe asthma	16.3	How and/or when to get tested	17.9	Internet	84.1
Diabetes	15.0	Prevention measures	9.6	TV	68.9
Serious heart conditions	8.7	Signs and symptoms	9.3	County of Kauai	47.6
Immunocompromised	7.8	How you get it	8.9	Newspaper	33.9
Chronic lung disease	2.9	Other	8.4	Local radio	27.5
Chronic kidney disease	1.4	Don't know	2.2	Friends and family	24.0
Liver disease	0.5	We don't need any additional information	68.9	Department of Health	21.6
None of the above	65.1			Word of mouth (coconut wireless)	16.2
Refused	0.5	Other information included antibody test, vaccine, and quarantine/isolation measure updates.		Health care provider	15.3
				Other	2.0

Other sources included medical journals, social media, the CDC, and the Mayor's daily updates.

## Financial Impacts of COVID-19

Question	Yes (%)	No (%)	Don't know (%)	Refused (%)		
Has anyone in your household lost their job or income as a result of the COVID-19 pandemic?	56.7	42.5	0.6	0.5		
If yes, does someone in your household know how to apply for unemployment benefits? (n=110)	87.6	9.8	2.5	-		
Has your household requested any assistance with housing expenses?	6.7	92.8	-	0.5		
If yes, has your household received any assistance? (n=13)	35.3	64.7	-	-		
In the last month, have you or anyone in your household had a hard time paying for transportation?	4.8	94.8	-	0.5		
	Bus fare (%)	Fuel (%)	Car repairs (%)	Car insurance (%)	Car payments (%)	
If yes, which of the following? (n=10)	10.0	40.0	20.0	50.0	60.0	
		Very (%)	Somewhat (%)	Not (%)	Refused (%)	
How concerned are you about your household's ability to pay next month's rent or mortgage?	13.4	20.3	65.3	1.0		
How concerned are you about your household's ability to pay for basic utilities like water or electricity?	12.1	16.9	70.5	0.5		
		Yes, all the time (%)	Most of the time (%)	No, we've had trouble feeding the household (%)	Other (%)	
In the last 30 days, have you had enough money to meet your household's food needs?	84.0	12.1	1.9	1.0		
	Food bank (%)	Food distribution program (%)	SNAP (%)	WIC (%)	Other (%)	None of the above (%)
Which community resources (if any) has your household received?	4.4	4.8	9.5	0.6	4.3	81.4
	Other responses included support from work, community gardens, HUD, credit unions, and the payroll protection program.					
		Yes (%)	No (%)	Don't know (%)	Refused (%)	
Has your household completed the census?	61.6	33.8	4.7	-		
	Haven't received it (%)	Haven't gotten around to it (%)	Don't know how/ need help (%)	Don't want to/ don't plan to (%)	Other (%)	Don't know (%)
If no, why not? (n=63)	36.8	44.8	15.5	-	1.4	1.4

Other reasons included waiting for a paper questionnaire, not having internet access and waiting for a family member to assist.



Question	Yes (%)	No (%)	Don't know (%)	Refused (%)
Does your household have any concerns or needs that we have not already mentioned?	14.2	85.8	-	-
<i>Concerns primarily focused on uncertainty regarding the resurgence of tourists and lifting restrictions, quarantine adherence, loss of employment and income, and interruptions in daily activities.</i>				
Finally, would you like to have someone from the health department contact you about any needs in these difficult times?	7.6	89.4	3.0	-

## CONCLUDING REMARKS

The 2020 Kauai CASPER collected invaluable data about the impact of the COVID-19 pandemic on Kauai households. The information gathered will be used to direct limited county and state resources to meet the most immediate needs of our island residents.

Preliminary recommendations are provided below; further recommendations will be provided in the Kauai 2020 CASPER final report upon release. All CASPER preliminary and final reports are available on the Kauai District Health Office's website at [www.health.hawaii.gov/kauai](http://www.health.hawaii.gov/kauai).

### Preliminary Recommendations

#### **1. A third of Kauai households (34%) have at least one member who is at high risk of severe disease from SARS-CoV-2.**

*Due to the vulnerability of many of our residents, and the limited ability to surge our health care capacity, a cautious approach to reopening is advised. Specifically, opening up to tourism needs to be carefully considered. At this time, the reliability of available PCR and antibody tests are inadequate to enable us to reopen to tourism safely without risking a second wave of infections. As a state with a high percentage of its working population in the tourism sector, and the uncertainty regarding when it will be safe to reopen this sector of our economy, the state should focus on how to meet the resource needs of this group through job development or additional unemployment benefits.*

**2. The majority of Kauai households appear to be stable in terms of housing, basic utilities, and food access. However, 34% of households reported that they are very concerned or somewhat concerned about their ability to pay the next month's rent or mortgage, 29% are very concerned or somewhat concerned about their ability to pay for basic utilities, 5% are having trouble paying for transportation, and 2.1% have had trouble feeding their household in the past 30 days. 19% of households indicated they had received some type of community food assistance.**

*Anecdotal reports from survey teams indicate that while most households are currently able to meet their basic needs, they are very concerned for their continued ability to do so over the next few months. The main contributing factor to this is the continued delays in state unemployment benefits. 57% of Kauai households have a member who has lost their job as a result of the pandemic. While the majority (88%) of those households reported that they knew how to apply for unemployment, many reported difficulty with the application process and/or receiving benefits. The Kauai CASPER survey did not dig as deeply into this topic as it should have, making it difficult to tease out what the access issues are. However, one CASPER survey team member reported in their participant feedback form that of the six households where respondents indicated they had applied for unemployment benefits with the state, only one had actually received a payment. The state unemployment system is antiquated and overwhelmed by the sudden rise in applicants. More state resources and personnel must be directed to this area. The most immediate and effective way to assist Hawaii families is through direct provision of cash payments. Issues regarding access to unemployment benefits should be further explored through CASPER or other tools.*

**3. Households generally appear to have access to the information they need regarding COVID-19 and are predominantly tuning in to the County of Kauai's COVID-19 page, daily video updates, and Facebook posts.**

*17.5% of households wanted additional information on how and/or when to get tested and 9% wanted additional information on disease prevention measures. Upcoming communication efforts should focus on these topic areas. A small percentage of surveyed households (12%) do not have access to the internet. HDOH and the County of Kauai need to continue to push messages through local radio, newspaper, and tv to ensure we are reaching all Kauai residents.*

**4. Households appear supportive of stay-at-home orders and compliant with physical distancing measures implemented on Kauai. The majority of households (98%) have face coverings for all household members and always (82%) wear them when out of the house. Anecdotally, survey teams reported that households expressed concerns related to what the next few months will look like and the plan for lifting restrictions.**

*Although the situation is changing rapidly, it is important the state and county continue to develop and communicate our re-opening strategy. The more transparent we are, the more likely we will maintain public trust and compliance with restrictions.*

**5. Less than 5% of households reported that a member had been tested for COVID-19; none of those received a positive result. Only 4.3% of households indicated that a member had been sick with what they thought was COVID-19 but didn't get tested.**

*This is encouraging in that it likely means our residents know how and where to get tested when they are sick. It further supports the disease trends we have seen over the past few months on Kauai. At the time the survey was conducted, no new cases had been reported for two weeks. HDOH should continue to prioritize communication regarding how and when to get tested for COVID-19.*

**6. The pandemic has placed enormous economic strain on American households. Economic strain often carries over into direct effects on the mental health of our community. On Kauai, one third of households (32%) indicated they had experienced emotional distress related to the pandemic. Of those, 21% did not know where to seek help if they needed it. Stress levels in Kauai households varied, with 5% reporting high, 34% medium, and 60% low stress.**

*Although the majority of Kauai households seem to be weathering the pandemic moderately well, 5% reported their stress level as high - near the breaking point. HDOH should continue to push mental health resources and consider how we can loosen restrictions that will have a positive impact on mental health without jeopardizing the public health response.*